Alstonia scholaris

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Alstonia scholaris (L.) R.Br.

Taxonomy and nomenclature

Family: Apocynaceae

Synonyms: *Echites scholaris* L., *E. pala* Ham., *Tabernaemontana alternifolia* Burm.

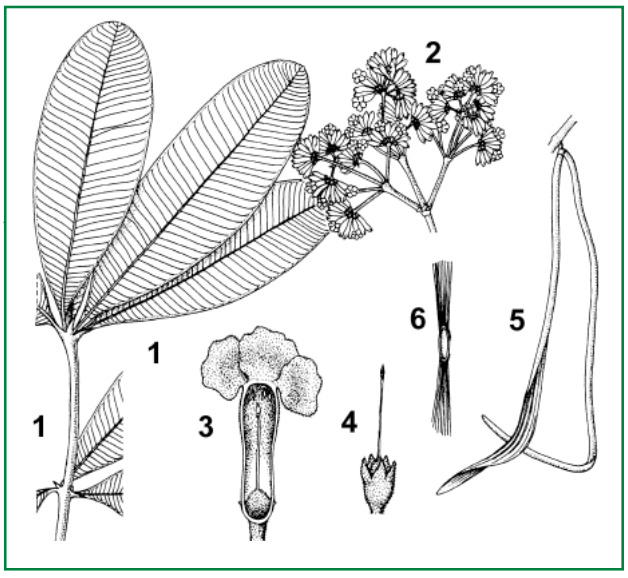
Vernacular/common names: White cheesewood, milky pine, pulai.

Distribution and habitat

Wide occurrence in the Asia-Pacific region from India and Sri Lanka through mainland South-East Asia and southern China, throughout Malaysia to northern Australia and the Solomon Islands. Introduced to southern USA where it is grown as an ornamental.

Tolerant of a variety of soils and habitats, it can be found as a small tree growing on coral or as a canopy species in inland primary or secondary forests. Most common in lowland coastal areas with annual rainfall of 1000-3800 mm but is found in up to 1000 m in altitude.

One of its characteristics is an ability to grow on shallow soils. Within the area of natural distribution temperature is never below 8°C, suggesting an intolerance to frost.



1, Foliage; 2, inflorescence; 3, sectioned flower; 4, calyx; 5, fruits; 6, seed. From: Plant Resources of South-East Asia 5:1.

Uses

The timber is a non-durable hardwood, suitable for light indoor construction purposes and pulp and paper production. It has been recommended as a fuelwood species for the Patana lands of Sri Lanka managed under a short coppice rotation (6-8 years) but it makes poor charcoal. The bark contains alkaloids used in medicine. The wood has been used for school blackboards, hence the name scholaris.

Botanical description

Tree, up to 40 m tall. The bole on older trees is strongly fluted; slash is cream coloured and with abundant, white latex. Leaves in whorls, obovate or elliptic. Flowers up to 1 cm long, cream or green, in branched, terminal panicles up to 120 cm long.

Fruit and seed description

Fruit: dehiscent, two-lobed follicle, somewhat woody, 15-32 cm long, with numerous seeds.

Seed: 4-5 mm long, brown, flat and oblong, with 7-13 mm long tufts of hair at the ends. The seeds are dispersed by wind. There are 37,000-87,000 seeds per kg.

Flowering and fruiting habit

Evergreen species. In Australia, the flowering period is October-December. In Sri Lanka there are two flowering events per year, April-June and October-November. Harvest in Sri Lanka is normally in February. In Laos it flowers at the end of the rainy season and is collected in February-March. In Vietnam flowering is in August-September, fruiting in January-February.

Harvest

The fruits are collected directly from the tree or from covers on the ground after shaking the branches. Seeds are mature when the fruits have turned brown, but harvest must be before the fruits open and the seed is dispersed. Collection must be well timed, typically there are only two weeks between the seeds are mature and the fruits begin to open.

Processing and handling

After harvest the fruits are dried in the sun until they open and release the seed, typically after one week. If the fruits have been harvested before they are mature, after-ripening in the shade is necessary.

The seeds are small and many may easily be blown away with the wind when the fruits open during drying. This can be avoided by drying the fruits in bags made of fine plastic mesh. In some places the hairs on the seeds are removed but it is not known how this affects storage and viability.

Storage and viability

Storage physiology is not known but the small size and the fact that the seed seems to tolerate sundrying indicate orthodox behaviour. Fresh seed has high germination, nearly 100%, but the seed rapidly loses viability. Seed stored for two months in airtight containers has been reported to germinate 90%. It is not known if it tolerates low temperatures.

Dormancy and pretreatment

Fresh seeds are not dormant and pretreatment is not necessary. The possibility of a secondary dormancy needs investigation.

Fruiting trees in plantation. Laos. Photo: Dorthe Jøker, DFSC.

Sowing and germination

There are no special requirements for sowing except that full sunlight seems preferable. With a shallow covering of sowing mixture, light and regular watering, germination starts within 12 days and continues for 3 months. Plantable seedlings of about 30 cm tall are produced in 9 to 12 months. Stumps of 6 mm diameter at the collar can also be used. Cleft grafting has been used with success for this species.

Selected readings

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